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REMARKS

I. Introduction

In response to the Office Action dated August 11, 2006, claims 13, 17 and 19 have been amended. Claims 1 and 3-20 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

II. Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

III. Prior Art Rejections

On pages (3)-(16) of the Office Action, claims 1, 3-6, 8-10 and 13-20 were rejected under 35 U.S.C. §102(e) as being anticipated by , or in the alternative under 35 U.S.C. §103(a) as being obvious in view of, U.S. Patent 6,675,159 (Lin). On pages (16)-(18) of the Office Action, claims 7, 11 and 12 were rejected under 35 U.S.C. §103 as being obvious in view of the combination of Lin and U.S. Patent 5,933,822 (Braden-Harder).

Applicants' attorney respectfully traverses these rejections.

Applicants' independent claim 1 recites a computer-implemented method of retrieving information, comprising: performing a pre-processing stage by parsing documents contained in a collection with a grammar in order to identify one or more concepts contained therein, and assigning concept labels to the documents contained in the collection based on the identified concepts. Applicants' independent claim 1 also recites performing a post-processing stage by applying the grammar to a query to convert the query to a query concept and mapping the query concept to a concept label that matches the query concept. (Independent claims 13, 17 and 19 recite similar limitations.)

Note that Applicants' independent claims recite that concept labels are assigned to documents contained in a collection based on identified concepts, and that query concepts are mapped to a concept label that matches the query concept.

Lin does not teach or suggest similar limitations. Instead, Lin describes a concept-based indexing and search system that indexes collections of documents with ontology-based predicate

structures through automated and/or human-assisted methods. The system extracts the concepts behind user queries to return only those documents that match those concepts. The concept based search and retrieval system comprehends the intent behind a query from a user, and returns results matching that intent. The system can perform off-line searches for unanswered user queries and notify the user when a match is found.

However, Lin only describes the use of predicate structures, and the matching of such predicate structures between queries and documents, as described in the following locations:

> Lin: column 14, lines 6-16
>
> The ontological parser is a tool, which transforms natural-language sentences into predicate structures. Predicate structures are representations of logical relationships between the words in a sentence. Every predicate structure contains a predicate, which is either a verb or a preposition, and a set of arguments, which may be any part of speech. Predicates are words which not only have intrinsic meaning of their own, but which also provide logical relations between other concepts in a sentence. Those other concepts are the arguments of the predicate, and are generally nouns, because predicate relationships are usually between entities.

> Lin: column 21, line 40 – column 21, line 20
>
> The following is an example of a sentence and demonstrates both how it is parsed as a sentence within a document (for storage within the data repository 150), and how a question would produce matching predicates to retrieve the document containing this sentence.
>
> The example sentence is:
>
> The octopus has a heart.
>
> First, the sentence lexer 122 would process this sentence. The first component of the sentence lexer 122, the document iterator 210, would extract this sentence from the document it was contained in. At this stage, it would exist as the text string shown above. Following that, it would be passed to the lexer 122, which would access the ontology 128, and return the sequence:
>
> The-det octopus-noun have-verb a-det heart-noun.
>
> Here, "det" stands for determiner, which is a word with a purely grammatical function, namely specifying a noun phrase. The other tags, noun and verb, indicate parts of speech with ontological content. Thus, when the sentence passes through the lexer filters 123, the stop WordFilter removes "a" and "the", leaving:
>
> octopus-noun have-verb heart-noun
>
> The sentence is then taken up by the sentence receiver 310, which passes it to the parser 124. In the parser 124, the following tree shown in FIG. 11.
>
> A parse tree converter 450 then converts this tree into a predicate, where octopus is the subject of have, and heart is the object. The predicate is:
>
> have<octopus, heart>

> This predicate is then passed through the parser filters 125, where it successfully passes the parse probability and selectional feature compatibility tests. After that, it is stored in a predicate library, and passed to the data repository 150.
>
> Suppose that a user asks the question, "Do octopuses have hearts?"
>
> The question will be read by the sentence lexer 122, and a sentence made of ontological entities is produced. It reads:
>
> Do-verb octopus-noun have-verb heart-noun
>
> In the lexer filters 123, the PseudoPredicateFilter removes the first verb, "do", because it is not the main verb of the sentence. "Do" only serves to fill a grammatical role within this type of question, and is thus removed, leaving:
>
> octopus-noun have-verb heart-noun
>
> This is identical to the sentence produced above, and results in the same parse tree, and the same predicate structure. Thus, when the query ontological parser 120 receives this question, it will enable the data repository 150 to find the document containing the sentence originally discussed.

The predicate structures described in Lin are not the same as the concept labels recited in Applicants' claims. The predicate structures of Lin represent words and structures within a sentence. Indeed, nowhere does Lin describe assigning concept labels to documents contained in a collection based on the identified concepts, or mapping a query concept to a concept label that matches the query concept.

Braden-Harder fails to overcome these deficiencies of Lin. Recall that Braden-Harder was only cited against dependent claims 7, 11 and 12, and only for teaching document location identifiers that are universal resource identifiers.

Thus, Applicants' attorney submits that independent claims 1, 13, 17 and 19 are allowable over Lin. Further, dependent claims 2-12, 14-16, 18 and 20 are submitted to be allowable over Lin and/or Braden-Harder in the same manner, because they are dependent on independent claims 1, 13, 17 and 19, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-12, 14-16, 18 and 20 recite additional novel elements not shown by Lin and/or Braden-Harder.

IV. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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